

Appl. No. 10/646,617
Amdt. dated November 6, 2007
Reply to Office Action of May 29, 2007

PATENT

Amendments to the Drawings:

The attached sheet of drawings includes changes to Figures 2-4 as required by the Examiner.
The replacement sheet of drawings, which includes Figures 1-4, replaces the original sheet with the same figures.

Attachment: Replacement Sheet
 Annotated Sheet Showing Changes

REMARKS/ARGUMENTS

Claims 1-4, 17-20, and 33 are provisionally rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 1, 2, 4-6, 19, 20, 22-24, 35, 36, 39, and 40 of copending Application No. 10/642,042.

Claims 1, 3, 10-13, 15, 17, 19, 26-29, 31, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olsson (US Patent No. 6,577,596) in view of Valencia (US Patent No. 6,754,712).

Claims 2 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olsson in view of Valencia, and further in view of Kroll (US Patent No. 6,700,895).

Claims 4, 5, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olsson in view of Valencia and further in view of Kim (US Patent No. 5,859,846).

Claims 6, 8, 9, 22, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olsson in view of Valencia and further in view of Choudhury (US Patent No. 6,092,115).

Claims 6, 7, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olsson in view of Valencia and further in view of Suzuki (US Patent No. 5,140,584).

Claims 14, 16, 30, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olsson in view of Valencia and further in view of Xiong (US Patent No. 6,958,996).

Claims 1, 7-10, 17, 23-26, and 33 are amended to correct minor informalities identified at pages 3-4 of the Office Action. In addition, the Abstract is amended to remove the words "comprising" and "comprise" as suggested by the Examiner. No new matter has been added by the amendments.

Objection to the Drawings

Figures 2-4 are objected to as lacking descriptive legends. While Applicants believe that a descriptive legend is not necessary for their proper understanding, replacement drawings with text labels as suggested by the Examiner are included herewith.

Provisional Double-Patenting Rejection

Applicants acknowledge the non-statutory obviousness type double patenting rejections and will determine whether to file a terminal disclosure at the appropriate time.

Claim 1

Claim 1 recites a method for managing network connections. The method includes, in part, "receiving a packet associated with a request for a protocol-based connection...forwarding the packet if the number of packets forwarded from the selected class in a predetermined time interval has not reached a first maximum count; and dropping the packet if the number of packets forwarded from the class in the predetermined time interval has reached the first maximum count" (emphasis added).

Applicants submit that neither Olsson nor Valencia discloses at least these limitations. Specifically, as discussed below, neither reference teaches or suggests forwarding/dropping a connection request packet based upon whether the number of packets forwarded from a selected class has reached a maximum value in a predetermined time interval. For at least this reason, the combination of references fails to teach or suggest each and every claim limitation and therefore does not render the claimed invention obvious.

a. The Olsson reference

Olsson discusses problems encountered when using header compression and packet fragmentation in a multi-layer protocol environment. In this context, Olsson discloses that packets with different degrees of time-sensitivity (or delay tolerance) may be stored in different priority queues. See, Olsson at col. 6, line 62-col. 7, line 14; col. 9, lines 43-55. For example, file transfer packets may be stored in a lower priority queue than real-time packets such as those containing voice or video data.

The Office Action equates Olsson's collection of priority queues with the claimed plurality of classes, and also equates the claimed 'first maximum count' with the depth of the priority queues. See, Office Action at pp. 9-10. The Office Action also notes that packets in Olsson's system are dropped when the priority queues become full. Based upon this reasoning,

the Office Action concludes that the depth of Olsson's priority queues establishes a maximum count of packets which can be stored. Id.

Applicants respectfully submit that Olsson does not teach or suggest forwarding/dropping a packet according to a number of packets forwarded in a predetermined time interval. Instead, Olsson simply discloses dropping packets that won't fit into their respective priority queues. There is no predetermined time interval involved and the decision to drop a packet is not based upon the number of packets forwarded in such a defined interval. In other words, Olsson simply discloses that if a particular queue can hold 100 packets, the 101st packet will be dropped regardless of when it arrives and regardless of how many packets have previously been forwarded. See, Olsson at col. 11, lines 45-55 ("If the queue associated with the priority or classification is full, the packet may be discarded by the scheduling process at PPP layer 620. If the queue associated with the priority or classification is not full header compression may be performed...before queuing the packet.").

b. The Valencia reference

Valencia also fails to disclose forwarding/dropping packets from a selected class based upon a number of packets forwarded in a predetermined time interval. Accordingly, Applicants respectfully submit that the combination of these references does not teach or suggest each and every claim element and therefore does not render claim 1 (or its dependent claims) obvious.

While the Office Action does not cite Valencia as teaching the limitations recited above, it does mention Valencia's use of counts in the rejection of claims 10 and 26. See, Office Action at page 11 (citing Valencia at col. 8, line 20-55, and col. 10, lines 5-15). As discussed below, Applicants respectfully submit that Valencia's counts are not related to the relevant claim limitations.

Valencia discusses a packet forwarding protocol that is used in connection with a proprietary gateway device. Valencia's protocol calls for adding various information fields to data packets. These fields specify the protocol carried within the packet and include a sequence identifier. See, Valencia at col. 8, lines 20-55. The sequence identifier is implemented as a free-

running counter so that a receiver can determine the proper sequence of packets in a flow and can discard packets that are received out-of-order. See, Valencia at col. 8, lines 43-48 ("The receiving side of the tunnel records the sequence number of each valid L2F packet it receives. If a received packet appears to have a value less than or equal to the last-received value, the packet must be silently discarded. Otherwise, the packet is accepted and the sequence number in the packet is recorded as the latest value last received.")

Valencia's sequence count is not related to a maximum count of packets forwarded in a predetermined time interval. Instead, it simply numbers packets so that they can be assembled in the proper order at a receiver. In the same manner, Valencia does not forward/drop a packet based upon the number of packets forwarded from a particular class in a predetermined time interval. Accordingly, for these additional reasons, Applicants respectfully submit that the combination of Olsson and Valencia fails to teach or suggest each and every claim element and thus fails to render the claimed invention obvious.

Claims 17 and 33

Claims 17 and 33 each recite limitations similar to those discussed in connection with claim 1 and each is believed allowable over the combination of Olsson and Valencia for at least the reasons previously given. Reconsideration of claims 1, 17, and 33 is respectfully requested.

Claims 2-16 and 18-32

Claims 2-16 and 18-32 depend from claims 17 and 33 respectively. Applicants submit that 2-16 and 18-32 are allowable over the cited references for at least the reason that they depend from allowable base claims. In this regard, it is respectfully noted that all remaining claim rejections add references which further limit Olsson in view of Valencia, and that none of these tertiary references cures the deficiencies in the base combination as previously identified. Accordingly, reconsideration and allowance of claims 2-16 and 18-32 is respectfully requested.

Claims 10 and 26

With regard to claims 10 and 26, Applicants submit that Olsson in view of Valencia does not teach or suggest the further claim limitations directed to a pass-through class.

Specifically, Olsson in view of Valencia does not teach or suggest at least "assigning the additional packet to a pass-through class; and forwarding the additional packet even if the first maximum count or the second maximum count has been reached."

The Office Action indicates that Valencia teaches these limitations through use of the sequence identifiers. More specifically, the Office Action states that Valencia forwards management packets having sequence identifier 0 without incrementing the sequence counter. See, Office Action at page 11 ("Thus it is clear that the management packets are sent even if the buffer/queue/resources/sequences reaches it threshold/limit for non-management packets.")

However, as previously discussed, Valencia does not disclose a maximum count of forwarded packets or dropping packets if the maximum count has been exceeded in a predetermined time interval. Rather, Valencia's counts are simply used to assemble received packets in the correct sequence. Since there is no maximum count of forwarded packets as recited in the claims, it is respectfully submitted that Valencia's management messages do not represent a "pass-through class" which avoids the maximum count. Accordingly, claims 10 and 26 are further allowable over the combination of Olsson and Valencia based upon these additional limitations.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

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If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 858-350-6100.

Respectfully submitted,



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